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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
DAVIS, MARY ALICE	

ART UNIT	PAPER NUMBER
3748	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,446	MATSUHASHI, HIDEAKI	
	Examiner	Art Unit	
	MARY A. DAVIS	3748	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 December 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-35* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-35* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *27 December 2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 14 – 35 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Independent claim 14 has been amended to include the limitation to: "such that machined at one time is a portion of said side face, of said one of said stationary scroll wrap and said slewing scroll wrap, extending substantially for a height of said one of said stationary scroll wrap and said slewing scroll wrap". Claim 28 includes the limitation to: "Hale-machining said side face of said one of said stationary scroll wrap and said slewing scroll wrap by moving said non-rotational blade along the longitudinal direction of said one of said stationary scroll wrap and said slewing scroll wrap results in an entirety of said side face of said one of said stationary scroll wrap and said slewing scroll wrap being machined in one pass of said non-rotational blade." The originally filed disclosure does not state that a portion of the side face extending for a height of the scroll wrap is machined at one time or that the entirety of the side face of the scroll wrap is machined in one pass. Figure 2C shows the resulting scroll wrap with multiple horizontal lines that can occur from multiple

passes of the non-rotational blade. Claims 15-35 are rejected by virtue of their dependence on claim 14.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 14-18, 22-24, and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP (World Intellectual Organization Publication Number WO 89/08522).

Regarding claim 14, BISHOP discloses:

- A method for machining a scroll wrap, comprising:
- forming a stationary scroll having an end plate and a scroll wrap extending from said end plate thereof (see Figures 1-2, Page 2, lines 12 - 14), said scroll wrap of said stationary scroll having a side face (see Figures 1-2 which show that the stationary scroll has a side face) (see Page 1, lines 13 - 17),
- forming a slewing scroll having an end plate and a scroll wrap extending from said end plate thereof (see Figures 3-4, Page 2, lines 12 - 14), said scroll wrap of said slewing scroll having a side face (see Figures 3-4 which show that the slewing scroll has a side face) (see Page 1, lines 13 - 17),

- wherein said side face of said stationary scroll wrap and said side face of said slewing scroll wrap are configured to slide with respect to each other in use (Page 1, lines 18 – 34); and
- Hale-machining said side face of one of said stationary scroll wrap and said slewing scroll wrap by moving along a longitudinal direction of said one of said stationary scroll wrap and said slewing scroll wrap a non-rotational blade (see Figures 1, 5-7, and 12 – 17; Page 4, line 25 – Page 5, line 24, Page 11, line 27+) such that machined at one time is a portion of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 14, Page 4, line 25 – Page 5, line 24, which shows that machined at one time is a portion of the side face).

Regarding claims 15 and 29, BISHOP discloses:

- the non- rotational blade has a length greater than the height of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7).

Regarding claims 16, 22, and 30, BISHOP discloses:

- cutting-machining by end milling both said side face of said one of said stationary scroll wrap and said slewing scroll wrap and a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends (see Figures 9 – 11 and 15; Page 11, lines 17 – 26 and Page 15, lines 27 - 33),
- wherein both said Hale-machining and said cutting-machining are performed while the one of said stationary scroll and said slewing scroll having said one of

said stationary scroll wrap and said slewing wrap is fixed in a chuck (see Figure 15, Page 11, line 32 – Page 16, line 25).

Regarding claims 17, 23, and 31, BISHOP discloses:

- machining a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends with the same non-rotational blade used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7 which shows that the end plate is also machined with the same non-rotational blade used for Hale-machining the side faces); and
- performing a finish cutting with a different non-rotational blade than that used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figures 9 – 11 and 15; Page 11, lines 17 – Page 16, line 25);
- wherein said Hale-machining, said machining, and said finish cutting are performed while the one of said stationary scroll and said slewing scroll having said one of said stationary scroll wrap and said slewing scroll wrap is fixed in a chuck (see Figure 15; Page 11, lines 17 – Page 16, line 25).

Regarding claims 18, 24, and 32, BISHOP discloses:

- simultaneously machining a surface of said end plate from which said one of said stationary scroll wrap and said slewing scroll wrap extends with the same non-rotational blade used for said Hale-machining of said side face of said one of said stationary scroll wrap and said slewing scroll wrap (see Figure 7 which

shows that the end plate is simultaneously being machined using the same non-rotational blade (11 or 12) used for Hale-machining the side faces).

Regarding claim 28, BISHOP discloses:

- Hale-machining said side face of said one of said stationary scroll wrap and said slewing scroll wrap by moving said non-rotational blade along the longitudinal direction of said one of said stationary scroll wrap and said slewing scroll wrap results in said side face of said one of said stationary scroll wrap and said slewing scroll wrap being machined by said non-rotational blade (Page 4, line 30 – Page 5, line 24).

BISHOP further discloses that "the tool is engaged with the wrap for a small depth compared to the depth engagement when the entire surface of the wrap (say 30 mm deep) is machined at once in the case of end-milling," (Page 5, line 33 – Page 6, line 6) and that multiple longitudinal passes are made with the non-rotational blade (see Page 4, line 30 – Page 5, line 24). In the current application, the applicant does not disclose the scroll wraps being machined at one time the entire height of the wrap, and likewise, does not disclose the benefits of doing a single machining operation.

However, BISHOP fails to disclose machined at one time is a portion of said side face, of said one of said stationary scroll wrap and said slewing scroll wrap, extending substantially for a height of said one of said stationary scroll wrap and said slewing scroll wrap so that either one of the stationary scroll wrap or the slewing scroll wrap side faces are machined in their entirety with one pass.

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have machined at one time the scroll wrap extending the height of the wrap in a longitudinal direction in the scroll machining of BISHOP, in order to reduce the machining time. Furthermore, BISHOP discloses end milling is performed in one pass (see Page 5, line 33 – Page 6, line 6), and therefore, it would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have tried machining the entirety of the side surface of either one of the stationary scroll wrap or slewing scroll wrap of BISHOP at one time extending the height of the wrap in one pass.

5. Claims 19, 25, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP.

BISHOP discloses the claimed invention, however, fails to disclose machining a surface of the end plate with a different non-rotational blade than the Hale-machining blade, which was used for machining the side faces of the stationary scroll wrap.

It is the examiner' s position that having a different non-rotational blade to machine the end-plate from the Hale-machining blade used for the side faces would have been obvious to one having ordinary skill in the art. More specifically, one having ordinary skill in the art would have generated a separate blade in order to machine the end-face in what ever shape or configuration desired. Utilization of two blades to perform the same machining as one blade involves only routine skill in the art.

6. Claims 20, 26, and 34 are rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP.

Regarding claims 20, 26, and 34, BISHOP discloses:

- said side face of said one of said stationary scroll wrap and said slewing scroll wrap includes an inner side face and an outer side face (see Figures 1-4 which show the inner and outer side faces of the scrolls).

However, he does not disclose the Hale-machining is performed on said inner side face and said outer side face in any one of an order from said inner side face to said outer side face and an order from said outer side face to said inner side face.

BISHOP discloses using two separate non-rotational blades to machine the inner and outer side faces of the scroll wraps simultaneously (see Figures 5-7), as well as, utilizing one Hale-machining blade to machine the inner and outer wraps (see Figures 12-14). It is the examiner' s position that the order of machining comprising of machining the inner than the outer wraps or the outer than the inner wraps would have been obvious to one having ordinary skill in the art when machining the scroll wraps using only one Hale machining blade. Generation of the order of machining when utilizing one Hale-machining blade involves only routine skill in the art.

7. Claims 21, 27, and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over BISHOP in view of NIWA ET AL (U.S. Patent Number 4,615,091).

BISHOP discloses the claimed invention as discussed above in claim 14, however, fails to disclose the resulting surface roughness of said side face of said one of said stationary scroll wrap and said slewing scroll wrap measures one micrometer at most.

The resulting surface roughness being one micrometer at most is a design resultant variable. NIWA ET AL discloses a cutting edge that depending on the amount of indexing would result in the desired size and finish (Column 1, lines 44 – 65).

It would have been obvious to a person having ordinary skill in the art at the time of the invention was made to have generated a surface roughness of less than one micrometer or any desired roughness, by changing the number of passes in the Hale-machining process of BISHOP.

Response to Arguments

8. Applicant's arguments with respect to claims 14-35 have been considered but are moot in view of the new ground(s) of rejection due to the newly amended claims.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Communication

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARY A. DAVIS whose telephone number is (571)272-9965. The examiner can normally be reached on Monday thru Thursday; 6:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Thomas Denion can be reached on (571) 272-4859. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mary A Davis/
Examiner, Art Unit 3748

/Thomas E. Denion/
Supervisory Patent Examiner, Art Unit 3748